

Comparisons of Job Characteristics

Focus Occupation: [Medical Scientists, Except Epidemiologists \(19-1042\)](#)

Associated Occupation: [Biomedical Engineers \(17-2031\)](#)

[Compare Knowledge](#)

[Compare Skills](#)

[Compare Abilities](#)

[Compare Detailed Work Activities](#)

[Compare Tools and Technologies](#)

| | |
|----|--|
| << | Focus occupation element is much lower |
| < | Focus occupation element is lower |
| 0 | Focus occupation element is at a similar level |
| > | Focus occupation element is at a higher level |
| >> | Focus occupation element is at a much higher level |

Knowledge

Similarity of Focus Occupation to Associated Occupation: 59

Focus Occupation: Medical Scientists, Except Epidemiologists (19-1042)

Associated Occupation: Biomedical Engineers (17-2031)

| Associated Occupation's Key Knowledge Elements | Average Rating, All Occupations | Associated Occupation's Rating | Focus Occupation's Rating | | Evaluation of Focus Occupation |
|--|---------------------------------|--------------------------------|---------------------------|----|---|
| Biology | 3.7 | 21.2 | 19.8 | 0 | Current knowledge level may be sufficient |
| Engineering and Technology | 5.7 | 21.0 | 7.5 | << | Extensive education and/or training may be required |
| Mathematics | 9.2 | 20.2 | 17.2 | < | Expanded education and/or training may be required |
| Physics | 4.3 | 17.6 | 8.0 | << | Extensive education and/or training may be required |
| Design | 5.2 | 16.6 | 4.0 | << | Extensive education and/or training may be required |
| Computers and Electronics | 8.4 | 16.5 | 11.6 | << | Extensive education and/or training may be required |
| Chemistry | 4.8 | 16.3 | 15.8 | 0 | Current knowledge level may be sufficient |
| Medicine and Dentistry | 3.7 | 14.4 | 15.6 | 0 | Current knowledge level may be sufficient |

The maximum possible rating is 25.

Source: Alaska Department of Labor and Workforce Development, Research and Analysis Section analysis of O*NET (Occupation Information Network) data.

Skills

Similarity of Focus Occupation to Associated Occupation: 84

Focus Occupation: Medical Scientists, Except Epidemiologists (19-1042)

Associated Occupation: Biomedical Engineers (17-2031)

| Associated Occupation's Key Skills Elements | Average Rating, All Occupations | Associated Occupation's Rating | Focus Occupation's Rating | | Evaluation of Focus Occupation |
|---|---------------------------------|--------------------------------|---------------------------|---|---------------------------------------|
| Science | 4.5 | 17.1 | 17.6 | 0 | Current skill level may be sufficient |
| Complex Problem Solving | 9.1 | 15.1 | 14.6 | 0 | Current skill level may be sufficient |
| Judgment and Decision Making | 9.4 | 15.1 | 12.8 | < | A higher skill level may be required |

| | | | | | |
|---------------------|-----|------|------|----|--|
| Operations Analysis | 5.0 | 14.6 | 10.0 | << | Extensive development of skills in this area may be required |
| Mathematics | 6.2 | 14.2 | 11.3 | < | A higher skill level may be required |
| Technology Design | 2.6 | 11.7 | 2.2 | << | Extensive development of skills in this area may be required |
| Programming | 2.2 | 10.1 | 3.8 | << | Extensive development of skills in this area may be required |
| Installation | 1.7 | 7.5 | 1.0 | << | Extensive development of skills in this area may be required |

The maximum possible rating is 25.

Source: Alaska Department of Labor and Workforce Development, Research and Analysis Section analysis of O*NET (Occupation Information Network) data.

| Abilities | | Similarity of Focus Occupation to Associated Occupation: 94 | | | |
|---|---------------------------------|---|---------------------------|--------------------------------|--|
| Focus Occupation: Medical Scientists, Except Epidemiologists (19-1042) Associated Occupation: Biomedical Engineers (17-2031) | | | | | |
| Associated Occupation's Key Abilities Elements | Average Rating, All Occupations | Associated Occupation's Rating | Focus Occupation's Rating | Evaluation of Focus Occupation | |
| Deductive Reasoning | 10.6 | 17.6 | 16.0 | < | Some improvement in abilities may be required |
| Inductive Reasoning | 10.2 | 16.8 | 18.6 | > | Current ability level is likely sufficient |
| Written Comprehension | 11.0 | 16.6 | 18.3 | > | Current ability level is likely sufficient |
| Problem Sensitivity | 11.1 | 16.3 | 16.1 | 0 | Current ability level may be sufficient |
| Oral Comprehension | 12.5 | 16.1 | 18.8 | > | Current ability level is likely sufficient |
| Originality | 7.6 | 14.5 | 10.0 | << | Extensive improvement in abilities may be required |
| Near Vision | 11.1 | 13.9 | 14.4 | 0 | Current ability level may be sufficient |
| Category Flexibility | 9.0 | 13.6 | 12.4 | 0 | Current ability level may be sufficient |
| Information Ordering | 9.9 | 13.6 | 13.9 | 0 | Current ability level may be sufficient |
| Mathematical Reasoning | 6.3 | 13.6 | 11.0 | < | Some improvement in abilities may be required |
| Visualization | 7.5 | 12.4 | 6.1 | << | Extensive improvement in abilities may be required |

The maximum possible rating is 25.

Source: Alaska Department of Labor and Workforce Development, Research and Analysis Section analysis of O*NET (Occupation Information Network) data.

| Activities that Both Occupations Have in Common | | Similarity of Focus Occupation to Associated Occupation: 77 |
|---|-------------------------|---|
| Focus Occupation: Medical Scientists, Except Epidemiologists (19-1042) Associated Occupation: Biomedical Engineers (17-2031) | | |
| Work Activities | Exclusivity of Activity | |
| Advise clients or customers | 19 | |
| Analyze scientific research data or investigative findings | 27 | |
| Collect scientific or technical data | 30 | |

| | |
|---|----|
| Communicate technical information | 4 |
| Confer with research personnel | 50 |
| Confer with scientists | 54 |
| Develop or maintain databases | 30 |
| Develop plans for programs or projects | 31 |
| Develop policies, procedures, methods, or standards | 21 |
| Develop tables depicting data | 33 |
| Direct and coordinate activities of workers or staff | 3 |
| Direct and coordinate scientific research or investigative studies | 27 |
| Explain complex mathematical information | 30 |
| Plan scientific research or investigative studies | 48 |
| Prepare reports | 8 |
| Prepare technical reports or related documentation | 22 |
| Use biological research techniques | 68 |
| Use computers to enter, access or retrieve data | 3 |
| Use government regulations | 44 |
| Use knowledge of investigation techniques | 16 |
| Use library or online Internet research techniques | 21 |
| Use mathematical or statistical methods to identify or analyze problems | 30 |
| Use project management techniques | 47 |
| Use quantitative research methods | 35 |
| Use relational database software | 26 |
| Use scientific research methodology | 21 |
| Use spreadsheet software | 18 |
| Use word processing or desktop publishing software | 17 |

Not all positions in these occupations will necessarily perform all of the listed activities. The exclusivity rating is an indication of how unique the activity is amongst all occupations. The maximum rating is 100. High scores indicate that only a small number of occupations engage in that activity.

Source: Alaska Department of Labor and Workforce Development, Research and Analysis Section analysis of O*NET (Occupation Information Network) data.

Tools and Technologies that Both Occupations Have in Common

Similarity of Focus
Occupation to Associated
Occupation: 68

Focus Occupation: Medical Scientists, Except Epidemiologists (19-1042)
Associated Occupation: Biomedical Engineers (17-2031)

| Tools and Technologies | Exclusivity |
|---|-------------|
| Autoclave and sterilizer equipment and accessories | 12 |
| Chemical evaluation instruments and supplies | 10 |
| Computer printers | 2 |
| Computers | 1 |
| Content authoring and editing software | 1 |
| Data management and query software | 1 |
| Development software | 4 |
| Electrochemical measuring instruments and accessories | 9 |
| Fluid mechanics equipment | 11 |
| Histology equipment | 35 |
| Indicating and recording instruments | 2 |

| | |
|---|----|
| Industry specific software | 1 |
| Laboratory centrifuges and accessories | 13 |
| Laboratory enclosures and accessories | 17 |
| Laboratory incubating equipment | 20 |
| Laboratory washing and cleaning equipment | 35 |
| Medical computed tomography CT or CAT systems and related products | 27 |
| Medical magnetic resonance imaging MRI products | 33 |
| Medical positron emission tomography PET equipment and related products | 56 |
| Medical ultrasound and doppler and echo imaging products | 19 |
| Spectroscopic equipment | 10 |
| Tissue culture and high throughput screening supplies | 31 |
| Viewing and observing instruments and accessories | 4 |

Not all positions in these occupations will necessarily use all of the listed tools and technologies. The exclusivity rating is an indication of how unique the tool or technology is amongst all occupations. The maximum rating is 100. High scores indicate that only a small number of occupations use that tool or technology.

Source: Alaska Department of Labor and Workforce Development, Research and Analysis Section analysis of O*NET (Occupation Information Network) data.